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ABSTRACT

Since 1966, the National Science Foundation (NSF) has monitored the annual inflows of scientists and engineers (SE) from abroad to provide information on levels and trends in scientist and engineering immigration and other related areas. This report provides data (in 6 charts and 10 statistical tables), which update previously published data, for fiscal years 1976-78 and 1982-84 (data for 1979-81 are not available). Charts summarize data on immigrant SE by type of admission (1966-84), adjustment-of-status immigrants as a proportion of total immigrants (1966-84), and SE admitted as immigrants in 1984, by region or birth, by region of intended United States residence and by age group. Data presented in the statistical tables include: immigration SE by field of specialization (1976-78 and 1982-84); immigrant SE by country or region of last permanent residence and major group (separate tables for 1982, 1983, and 1984); immigrant SE by country or region of birth and major group (separate tables for 1982, 1983, and 1984); migration patterns of SE who became immigrants in 1984; immigrant SE by state of intended residence and major group (1984); and immigrant SE by sex, age group, and region of last permanent residence (1984). (JN)

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immigrant scientists and engineers: 1982-84

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detailed tables and charts

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general notes

Since 1966, the National Science Foundation (NSF) has monitored the annual inflows of scientists and engineers from abroad. The NSF data collection effort on these personnel has several goals. Insofar as possible, NSF seeks to provide data to policymakers and researchers on:

- (1) Levels and trends in scientist and engineer immigration;
- (2) Characteristics of those from abroad; e.g., age, sex, field of specialization, and type of entry;
- (3) Country of origin of these personnel (many immigrants born in one country reside elsewhere for a year or

more before coming here),

- (4) Numbers of scientists and engineers receiving certification from the U.S. Department of Labor (Labor) and entering the United States to work in shortage occupations.

The Immigration and Naturalization Service (INS) compiles information on all personnel who enter the United States from abroad, and NSF acquires these data for those classified as scientists and engineers. The data tabulations in this report, which update previously published data, cover fiscal years 1976-78, and 1982-84 (data for 1979-81 are not available).

As used in the tables in this report, the term "immigrant" refers to those allowed to stay permanently and obtain U.S. citizenship. The term "adjustment-of-status" refers to those admitted on a temporary basis for a specific purpose such as study and later became immigrants.

Requests for previously published data and additional information should be addressed to:

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technical notes

immigration regulations

The Immigration and Nationality Act of 1952 (the Act), as amended, is the basis of current U.S. immigration policy. Immigration for permanent residence in the United States is limited to 290,000 in any year with a maximum of 20,000 for any one country. The Act also provides for admission outside of these limitations of spouses of U.S. citizens and certain special immigrants such as refugees.

The Act also establishes a preference system for persons subject to limitations as follows:

- (1) Unmarried sons and daughters of U.S. citizens and their children. Limited to 20 percent of annual world quota.
- (2) Spouses, unmarried sons and daughters of permanent resident aliens, and their children. Limited to 26 percent of annual world quota plus unused from first preference.
- (3) Members of the professions of exceptional ability in the sciences or arts and their spouses and children, limited to 10 percent of annual world quota.
- (4) Married sons and daughters of U.S. citizens and their spouses and children limited to 10 percent of annual world

quota plus those unused from higher preferences.

- (5) Brothers and sisters of U.S. citizens and their spouses and children limited to 24 percent of annual world quota plus those unused from higher preferences.
- (6) Workers in skilled or unskilled occupations in which laborers are in short supply in the United States and their spouses and children limited to 10 percent of annual world quota.

Nonpreference:

Qualified applicants not eligible for above preferences limited to number not used in other preferences.

The Act requires that aliens who seek to immigrate to the United States under the third, sixth, or nonpreference quotas must obtain a certificate from the Secretary of Labor to the effect that (a) there are not sufficient qualified domestic workers available to perform the proposed labor of the applicant, and, (b) the employment of the applicant will not adversely affect the wages and working conditions of similarly employed workers.

The Act permits certain aliens in the United States in other than lawful permanent residence, such as students on temporary visas, to acquire immigrant status administratively without having to obtain immigrant visas from a U.S. Consular abroad as usually required. In this report, such persons are designated "adjustment-of-status immigrants."

data comparability

Occupational information on immigration is not available for 1979-81. The figures shown on the charts of this report for those years are interpolations.

Professors and instructors are included in their fields of specialization for 1966-78. Such data are not available for 1983 and 1984. The number of immigrant science and engineering professors and instructors included in the tables and charts of this report for 1966-84 are as follows:

1966	'67	'68	'69	'70	'71	'72	'73	'74	'75
500	1,000	800	800	800	700	600	200	300	300

'76	'77	'78	'79	'80	'81	'82	'83	'84
300	200	400	NA	NA	NA	300	NA	NA

NOTE NA - not available

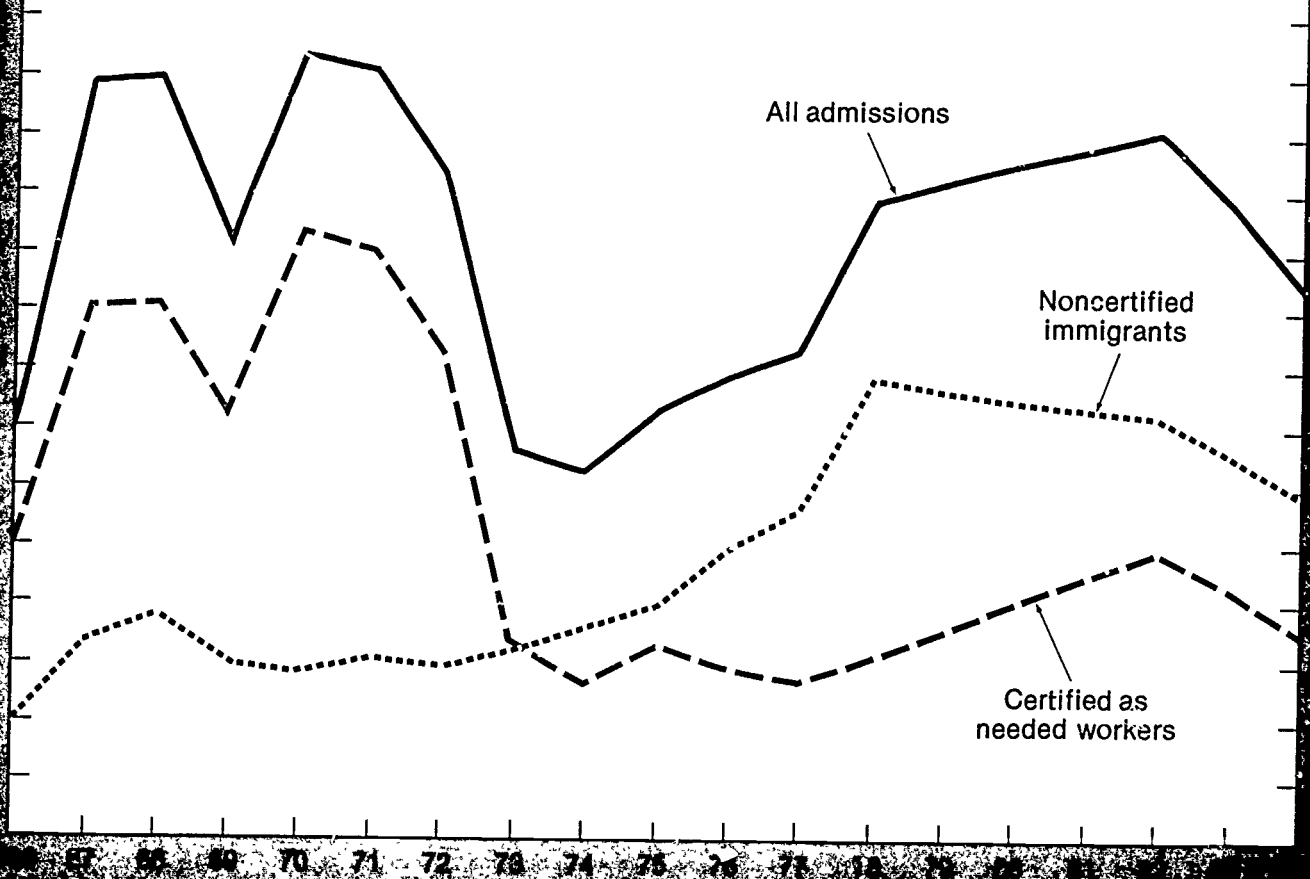
Throughout the tables and charts of this report, the term "other" within occupational groups includes scientists and engineers whose fields are not known, as well as the smaller fields which are not shown separately.

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Immigrant scientists and engineers: 1966-84
(in thousands)

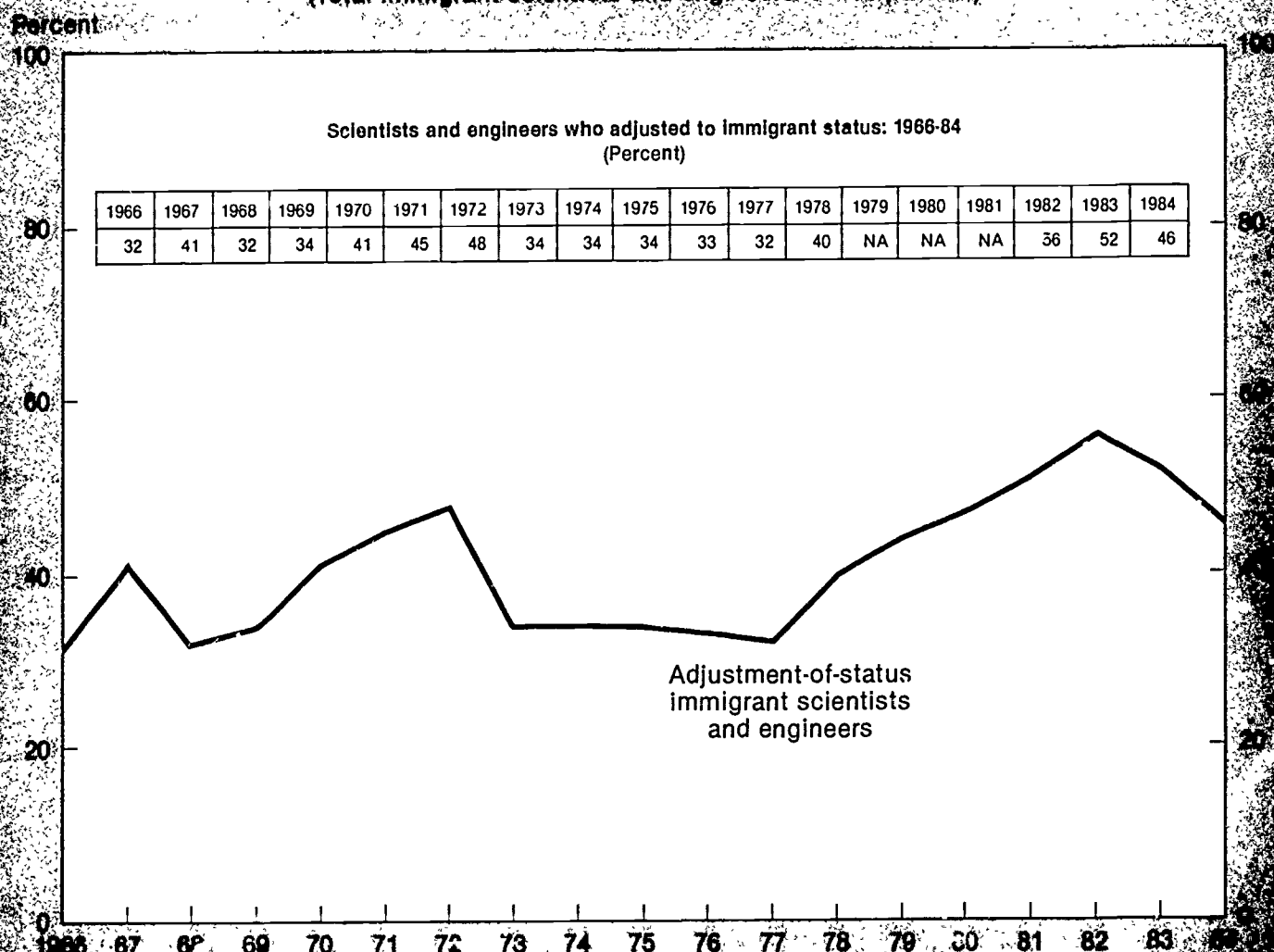
	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Total	7.2	12.5	13.0	10.3	13.3	13.1	11.3	6.6	6.3	7.4	7.9	8.4	10.9	NA	NA	NA	12.2	10.6	9.5
Certified	NA	9.0	9.1	7.2	10.3	10.0	8.3	3.4	2.6	3.4	3.0	2.8	3.1	NA	NA	NA	5.0	4.4	3.5
Noncertified	NA	3.5	3.9	3.0	3.0	3.1	3.0	3.2	3.7	4.0	5.0	5.6	7.8	NA	NA	NA	7.2	6.2	6.0



- Immigration of scientists and engineers rose sharply between 1966 and 1971 because of revisions in the law allowing greatly expanded entry from Asian countries. The sharp decline between 1971 and 1975 and the subsequent movements through 1984 reflect changes in regulations making immigration of persons seeking entry as professional and skilled workers dependent on U.S. labor market conditions.

Chart B-2. Adjustment-of-status immigrants as proportion of total immigrants: 1966-84

(Total immigrant scientists and engineers = 100 percent)

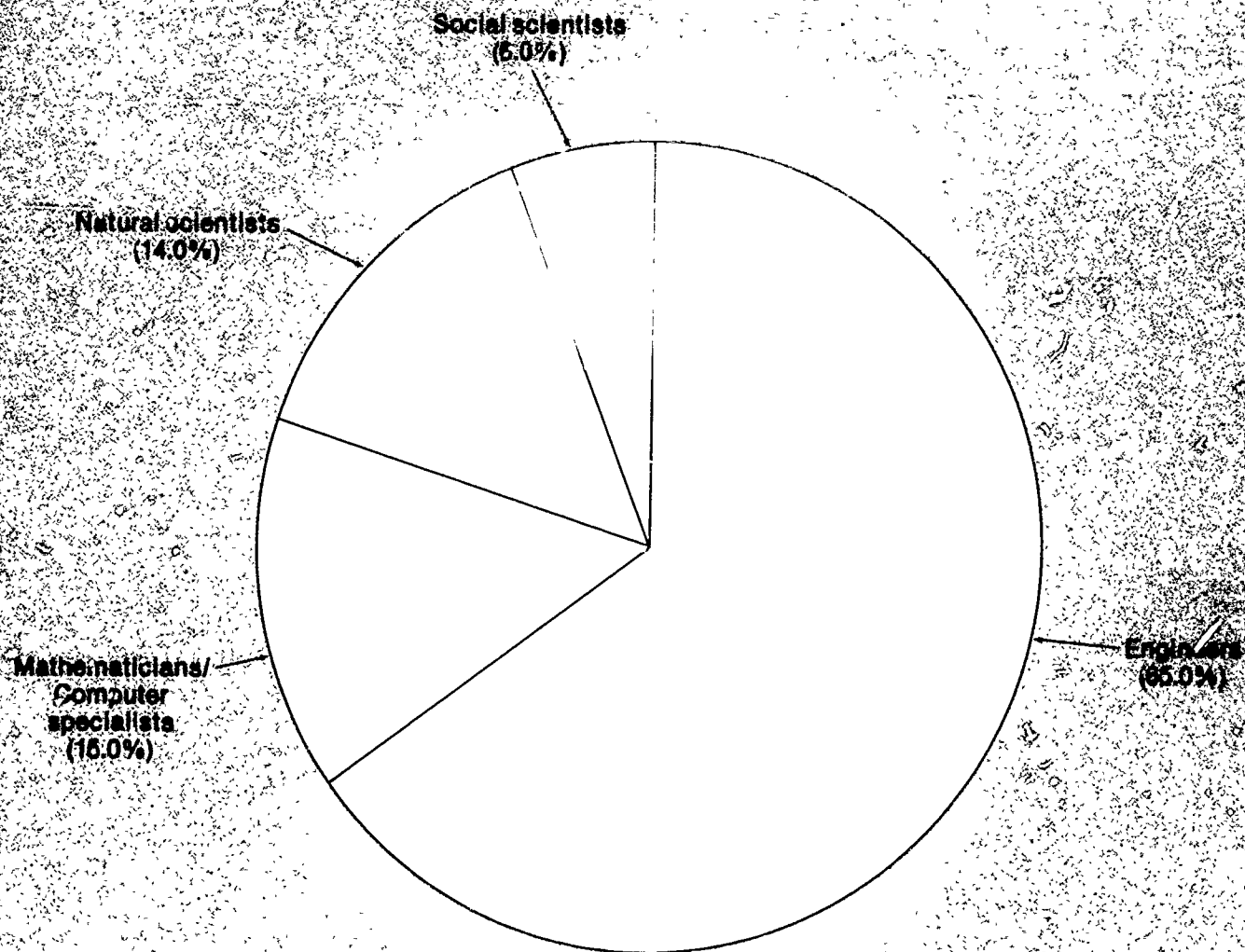


NOTE: NA = not available.

SOURCE: National Science Foundation, based on data of the Immigration and Naturalization Service, U.S. Department of Justice.

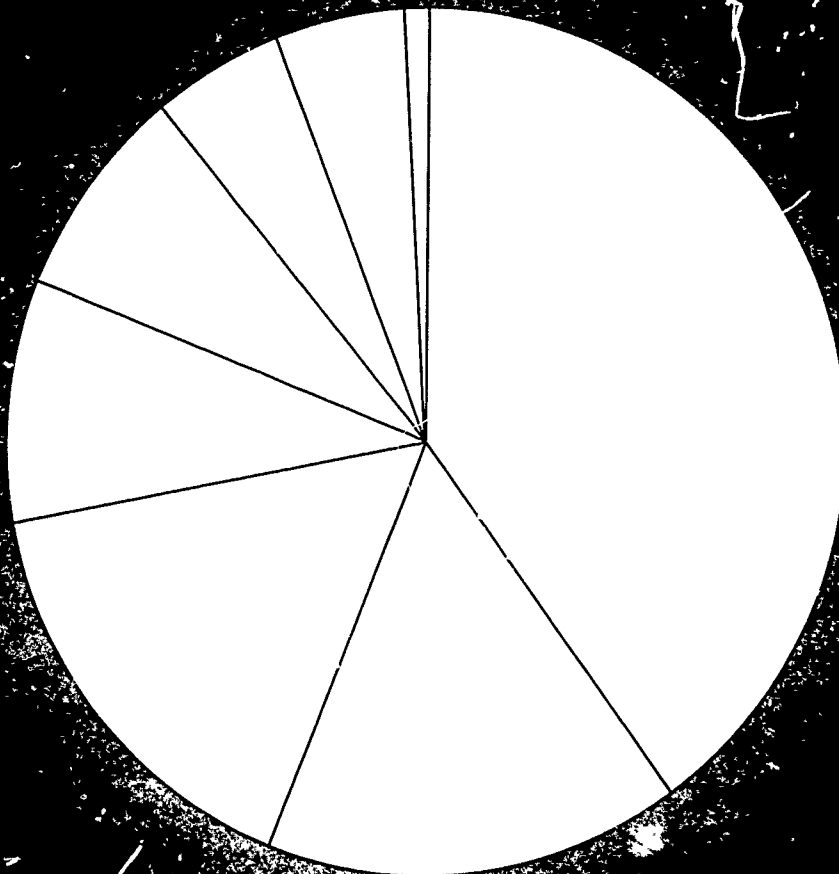
- The proportion of alien scientists and engineers whose status changed from nonimmigrant to immigrant (adjustment-of-status) increased between 1968 and 1972. U.S. law was amended to permit the backlog of Asians who already had entered the United States on temporary visas awaiting quota preferences to be admitted as immigrants. The levels of adjustment have increased since 1976 for three reasons. First, direct immigration of workers who had not obtained a job commitment in the United States has been restricted, second, there has been an increase in the pool of foreign science/engineering (S/E) students, many of whom seek to remain in the United States after graduation; and third, aliens from noncontiguous Western Hemisphere countries have been allowed for the first time to adjust their status.

Chart B-3. Admission of immigrant scientists and engineers by occupational group, 1984

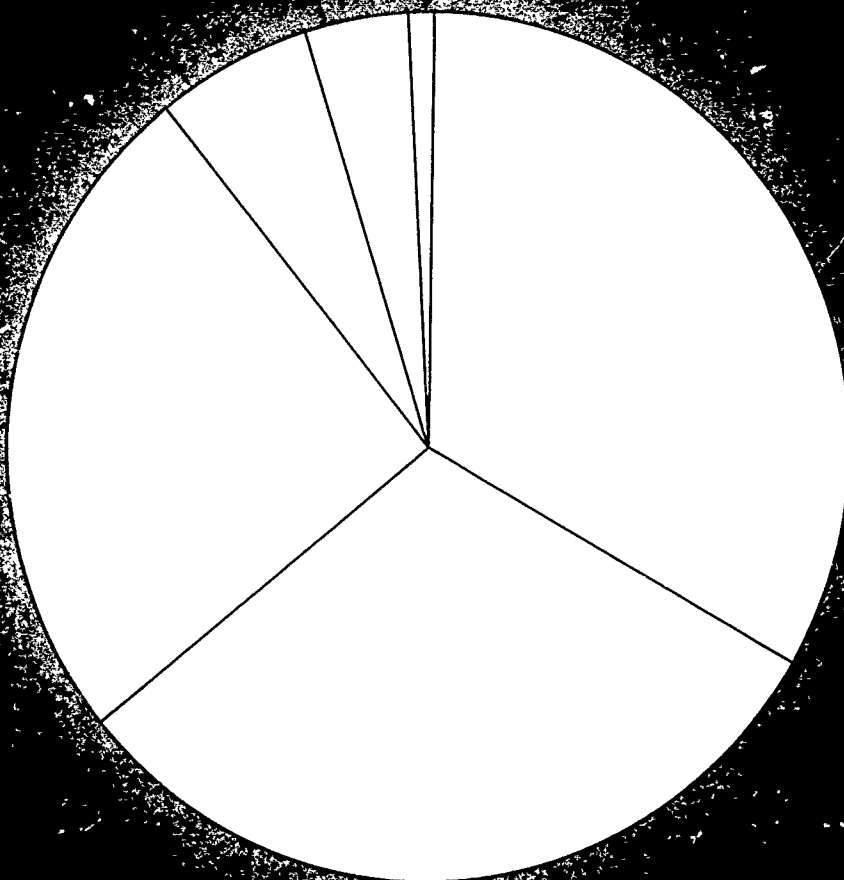


SOURCE: National Science Foundation, based on data of the Immigration and Naturalization Service, U.S. Department of Justice.

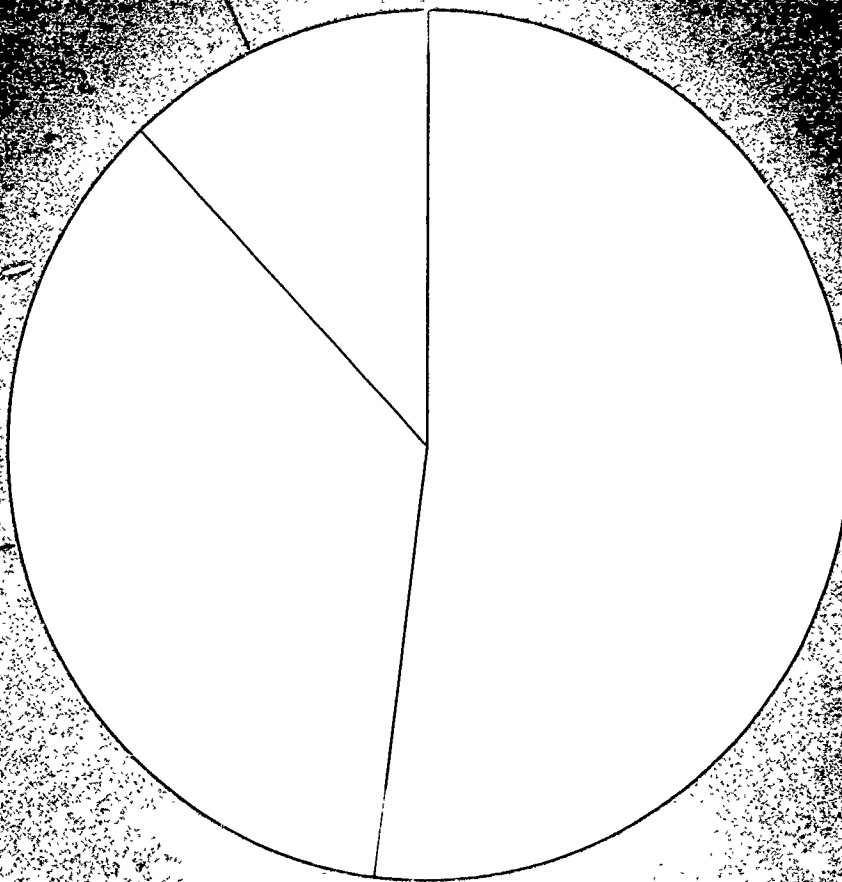
- The 1984 immigrant scientists and engineers were distributed by occupation in roughly the proportions as the United States scientist/engineer population.



- Changes in national immigration law in 1966 made it possible for many more Asians to become immigrants. Between 1966 and 1984, Asian-born scientists and engineers increased from less than 30 percent to nearly 60 percent of all immigrant scientists and engineers.



- The 1984 immigrants were much more likely to reside in the Pacific region than total employed U.S. scientists and engineers — 33 percent versus 18 percent.



SOURCE: National Science Foundation, based on data of the Immigration and Naturalization Service, U.S. Department of Justice

- Scientists and engineers admitted as immigrants in 1984 were younger than the U.S. stock of employed scientists and engineers — 36 percent were under 30 and only 12 percent were 45 or older. Twenty percent of the U.S. stock of scientists and engineers are under 30 and over one-third are 45 or older.

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TABLE C-1. Immigrant scientists and engineers by field of specialization: 1976-78 and 1982-84 ^{1/}

Field of specialization	1976	1977	1978	1982	1983	1984
Total.....	7,782	8,189	10,455	12,180	10,566	9,502
Engineers, total.....	5,146	5,191	6,762	7,877	6,794	6,110
Aeronautical.....	32	61	75	91	74	67
Chemical.....	446	470	481	394	338	304
Civil.....	697	543	704	750	645	580
Electrical/electronics...	754	680	916	1,001	866	779
Industrial.....	190	205	263	286	243	219
Mechanical.....	823	676	811	910	782	703
Metallurgical/metallurg- ists.....	72	95	86	60	53	48
Mining and petroleum....	86	130	135	173	148	133
Sales.....	46	59	60	56	53	48
Other.....	2,000	2,272	3,231	4,229	3,655	3,286
Natural scientists.....	1,737	1,983	2,320	1,882	1,627	1,463
Agricultural scientists..	241	314	437	325	285	257
Biologists.....	268	325	334	230	201	181
Chemists.....	678	752	868	677	581	523
Geologists and geophys- icists.....	119	118	131	173	148	133
Mathematicians and rel- ated.....	210	228	254	131	116	105
Physicists, astronomers.. and space scientists...	174	181	208	216	190	171
Other physical scientists	47	65	88	130	106	93
Social scientists.....	612	645	784	747	623	561
Economists.....	336	374	426	375	296	266
Psychologists.....	131	137	206	208	180	162
Other.....	145	134	152	162	147	133
Computer specialists	287	370	599	1,674	1,522	1,368

^{1/} Data not available for 1979-81.

SOURCE: National Science Foundation, based on data of the Immigration and Naturalization Service, U. S. Dept. of Justice.

TABLE C-2. Immigrant scientists and engineers by country or region of last permanent residence and by major group: 1982

Country or region of last residence	Total, all groups	Engineers	Natural scientists	Mathematics and related, and computer specialists	Social scientists
All countries.....	12,188	7,880	1,756	1,805	747
Europe.....	3,013	1,952	398	410	253
Western Europe.....	1,994	1,239	305	290	160
Austria.....	38	24	7	4	3
Belgium.....	38	19	8	4	7
Denmark.....	17	12	-	4	1
France.....	106	57	19	23	7
German Federal Republic.....	175	114	34	14	13
Greece.....	104	70	15	12	7
Ireland.....	36	24	5	4	3
Italy.....	148	109	15	15	9
Netherlands.....	65	29	17	9	10
Norway.....	22	14	3	2	3
Spain.....	50	26	8	3	13
Sweden.....	65	44	5	8	8
Switzerland.....	57	34	14	4	5
United Kingdom.....	1,034	638	151	181	64
Other.....	39	25	4	3	7
Eastern Europe.....	1,019	713	93	120	93
Poland.....	169	97	17	6	49
USSR.....	666	483	60	100	23
Yugoslavia.....	27	17	3	2	5
Other.....	157	116	13	12	16
Asia.....	6,521	4,416	826	1,019	260
Near and Middle East....	1,191	825	119	166	81
Iran.....	501	367	33	67	34
Iraq.....	39	29	7	3	-
Israel.....	235	122	31	58	24
Lebanon.....	89	66	9	13	1
Other Near and Middle East..	327	241	39	25	22
Far East.....	5,330	3,591	707	853	179
Hong Kong.....	246	146	31	64	5
Mainland China.....	825	587	75	155	8
India.....	1,523	1,059	259	137	68
Pakistan.....	202	136	34	28	4
Japan.....	98	56	22	14	6
Korea.....	292	207	35	39	11

See footnotes at end of table.

TABLE C-2. Immigrant scientists and engineers by country / or region of last permanent residence and by major group: 1982--con.

Country or region of last residence	Total, all groups	Engineers	Natural scientists	Mathematics and related, and computer specialists	Social scientists
Philippines.....	721	489	103	88	41
Taiwan.....	936	564	103	249	20
Other Far East.....	487	347	45	79	16
Africa.....	517	322	91	62	42
Egypt.....	165	118	33	10	4
Other Africa.....	352	204	58	52	38
North and Central America.....	1,522	840	319	236	127
Canada.....	727	391	146	143	47
Mexico.....	190	118	41	18	13
Other North and Central America.....	605	331	132	75	67
South America.....	452	270	73	56	53
Argentina.....	51	30	10	5	6
Bolivia.....	24	14	5	3	2
Brazil.....	29	15	5	4	5
Chile.....	34	16	8	5	5
Colombia.....	102	61	15	11	15
Ecuador.....	10	7	-	3	-
Peru.....	62	34	7	9	12
Venezuela.....	61	44	6	9	2
Other South America.....	79	49	17	7	6
All other areas.....	163	80	49	22	12
Australia.....	113	48	37	16	12
New Zealand.....	41	26	11	4	-
Other areas.....	9	6	1	2	-

- Data not available.

SOURCE: Immigration and Naturalization Service, U. S. Dept. of Justice, and National Science Foundation

TABLE C-3. Immigrant scientists and engineers by country or region of last permanent residence and by major group: 1983

Country or region of last residence	Total, all groups	Engineers	Natural scientists	Mathematics and related, and computer specialists	Social scientists
All countries.....	10,566	7,803	1,451	975	337
Europe.....	2,523	1,788	374	247	114
Western Europe.....	2,019	1,419	309	212	79
Austria.....	30	25	2	1	2
Belgium.....	28	19	8	-	1
Denmark.....	22	20	2	-	-
France.....	117	83	23	5	6
German Federal Republic.....	194	118	42	16	18
Greece.....	80	60	8	3	9
Ireland.....	33	18	7	6	2
Italy.....	110	84	15	10	1
Netherlands.....	57	39	11	4	3
Norway.....	22	18	2	1	1
Spain.....	54	36	9	5	4
Sweden.....	61	45	8	7	1
Switzerland.....	53	28	14	7	4
United Kingdom.....	1,107	799	145	142	21
Other.....	51	27	13	5	6
Eastern Europe.....	504	369	65	35	35
Poland.....	151	97	25	10	19
USSR.....	200	160	24	13	3
Yugoslavia.....	31	18	6	2	5
Other.....	122	94	10	10	8
Asia.....	5,748	4,434	695	537	82
Near and Middle East....	1,179	975	88	94	22
Iran.....	556	471	31	47	7
Iraq.....	20	15	2	3	-
Israel.....	191	128	29	23	11
Lebanon.....	87	75	3	9	-
Other Near and Middle East.....	325	286	23	12	4
Far East.....	4,569	3,459	607	443	60
Hong Kong.....	238	180	24	31	3
Mainland China.....	341	249	49	41	2
India.....	1,398	1,040	255	84	19
Pakistan.....	183	152	22	6	3
Japan.....	97	74	12	10	1
Korea.....	263	206	37	13	7

See footnotes at end of table.

TABLE C-3. Immigrant scientists and engineers by country or region of last permanent residence and by major group: 1983--con.

Country or region of last residence	Total, all groups	Engineers	Natural scientists	Mathematics and related, and computer specialists	Social scientists
Philippines.....	614	502	65	40	7
Taiwan.....	1,117	807	109	188	13
Other Far East.....	318	249	34	30	5
Africa.....	456	319	88	32	17
Egypt.....	140	96	36	4	4
Other Africa.....	316	223	52	28	13
North and Central America.....	1,263	869	208	108	78
Canada.....	582	386	109	66	21
Mexico.....	209	172	22	7	8
Other North and Central America.....	472	311	77	35	49
South America.....	473	336	65	39	33
Argentina.....	44	31	8	4	1
Bolivia.....	20	14	-	4	2
Brazil.....	44	33	6	2	3
Chile.....	24	15	5	1	3
Colombia.....	79	51	16	7	5
Ecuador.....	21	16	1	1	3
Peru.....	67	49	5	4	9
Venezuela.....	93	68	13	9	3
Other South America.....	81	59	11	7	4
All other areas.....	101	55	21	12	13
Australia.....	68	37	13	7	11
New Zealand.....	24	15	4	3	2
Other areas.....	11	5	4	2	-

- Data not available.

SOURCE: Immigration and Naturalization Service, U. S. Dept. of Justice, and National Science Foundation

TABLE C-4. Immigrant scientists and engineers by country or region of last permanent residence and by major group: 1984

Country or region of last residence	Total, all groups	Engineers	Natural scientists	Mathematics and related, and computer specialists	Social scientists
All countries.....	9,502	7,281	1,173	732	316
Europe.....	2,514	1,834	353	211	116
Western Europe.....	2,017	1,475	284	190	68
Austria.....	51	38	10	-	3
Belgium.....	42	31	6	3	2
Denmark.....	24	22	1	-	1
France.....	127	82	24	14	7
German Federal Republic.....	267	181	55	12	19
Greece.....	87	67	10	3	7
Ireland.....	34	27	3	3	1
Italy.....	128	108	8	10	2
Netherlands.....	49	31	13	4	1
Norway.....	19	18	1	-	-
Spain.....	45	31	7	4	3
Sweden.....	68	56	8	3	1
Switzerland.....	48	29	15	1	3
United Kingdom.....	1,001	734	122	131	14
Other.....	27	20	1	2	4
Eastern Europe.....	497	359	69	21	48
Poland.....	205	141	27	8	29
USSR.....	114	90	12	5	7
Yugoslavia.....	44	33	7	1	3
Other.....	134	95	23	7	9
Asia.....	4,871	3,943	500	349	79
Near and Middle East....	1,191	1,004	92	67	28
Iran.....	578	495	42	33	8
Iraq.....	26	21	4	1	-
Israel.....	162	109	25	18	10
Lebanon.....	93	83	3	3	4
Other Near and Middle East.....	332	296	18	12	6
Far East.....	3,680	2,939	408	282	51
Hong Kong.....	176	144	8	19	5
Mainland China.....	254	213	23	16	2
India.....	963	779	142	37	5
Pakistan.....	159	137	16	5	1
Japan.....	71	43	17	7	4
Korea.....	184	152	9	17	6

See footnotes at end of table.

TABLE C-4. Immigrant scientists and engineers by country or region of last permanent residence and by major group: 1984--con.

Country or region of last residence	Total, all groups	Engineers	Natural scientists	Mathematics and related, and computer specialists	Social scientists
Philippines.....	715	594	67	42	12
Taiwan.....	874	653	94	117	10
Other Far East.....	284	224	32	22	6
Africa.....	372	271	65	25	11
Egypt.....	113	81	28	1	3
Other Africa.....	259	190	37	24	8
North and Central America.....	1,152	819	172	106	55
Canada.....	561	392	91	61	17
Mexico.....	147	114	13	10	10
Other North and Central America.....	444	313	68	35	28
South America.....	481	335	63	32	51
Argentina.....	43	27	12	2	2
Bolivia.....	20	13	3	-	4
Brazil.....	54	32	10	8	4
Chile.....	24	13	5	2	4
Colombia.....	84	55	12	4	13
Ecuador.....	18	15	1	1	1
Peru.....	59	46	2	6	5
Venezuela.....	115	87	11	6	11
Other South America.....	64	47	7	3	7
All other areas.....	112	79	20	9	4
Australia.....	81	56	12	9	4
New Zealand.....	20	12	8	-	-
Other areas.....	11	11	-	-	-

- Data not available.

SOURCE: Immigration and Naturalization Service, U. S. Dept. of Justice, and National Science Foundation

TABLE C-5. Immigrant scientists and engineers by country or region of birth and by major group: 1982

Country or region of birth	Total, all groups	Engineers	Natural scientists	Mathematics and related, and computer specialists	Social scientists
All countries.....	12,188	7,880	1,756	1,805	747
Europe.....	2,924	1,882	386	401	255
Western Europe.....	1,677	1,013	261	255	148
Austria.....	20	8	8	3	1
Belgium.....	29	11	7	6	5
Denmark.....	19	14	1	3	1
France.....	71	42	10	14	5
German Federal Republic.....	121	78	21	14	8
Greece.....	92	60	13	12	7
Ireland.....	44	30	7	5	2
Italy.....	59	33	13	5	8
Netherlands.....	59	26	18	6	9
Norway.....	22	15	1	2	4
Spain.....	38	19	8	2	9
Sweden.....	54	38	4	8	4
Switzerland.....	47	31	7	5	4
United Kingdom.....	956	581	137	166	72
Other.....	46	27	6	4	9
Eastern Europe.....	1,247	869	125	146	107
Poland.....	214	123	24	12	55
USSR.....	768	562	67	112	27
Yugoslavia.....	31	19	5	2	5
Other.....	234	165	29	20	20
Asia.....	6,929	4,703	890	1,067	269
Near and Middle East....	1,218	857	116	165	80
Iran.....	613	452	46	77	38
Iraq.....	74	51	12	11	-
Israel.....	140	71	12	37	20
Lebanon.....	109	86	9	13	1
Other Near and Middle East.....	282	197	37	27	21
Far East.....	5,711	3,846	774	902	189
Hong Kong.....	177	99	29	44	5
Mainland China.....	1,066	743	114	196	13
India.....	1,701	1,189	280	158	74
Pakistan.....	231	152	44	32	3
Japan.....	90	49	23	13	5
Korea.....	298	209	36	40	13

See footnotes at end of table.

TABLE C-5. Immigrant scientists and engineers by country or region of birth and by major group: 1982--con.

Country or region of birth	Total, all groups	Engineers	Natural scientists	Mathematics and related, and computer specialists	Social scientists
Philippines.....	732	497	105	89	41
Taiwan.....	839	501	86	233	19
Other Far East.....	577	407	57	97	16
Africa.....	577	352	102	83	40
Egypt.....	195	134	41	15	5
Other Africa.....	382	218	61	68	35
North and Central America.	1,127	593	247	174	113
Canada.....	340	146	79	81	34
Mexico.....	171	105	40	15	11
Other North and Central America.....	616	342	128	78	68
South America.....	490	283	88	62	57
Argentina.....	53	30	12	5	6
Bolivia.....	24	14	5	3	2
Brazil.....	32	16	6	4	6
Chile.....	36	17	8	6	5
Colombia.....	109	63	17	14	15
Ecuador.....	13	8	1	3	1
Peru.....	65	35	9	9	12
Venezuela.....	64	46	7	9	2
Other South America.....	94	54	23	9	8
All other areas.....	141	67	43	18	13
Australia.....	88	34	29	12	13
New Zealand.....	43	25	14	4	-
Other areas.....	10	8	-	2	-

- Data not available.

SOURCE: Immigration and Naturalization Service, U. S. Dept. of Justice, and National Science Foundation

TABLE C-6. Immigrant scientists and engineers by country or region of birth and by major group: 1983

Country or region of birth	Total, all groups	Engineers	Natural scientists	Mathematics and related, and computer specialists	Social scientists
All countries.....	10,566	7,803	1,451	975	337
Europe.....	2,342	1,648	350	233	111
Western Europe.....	1,684	1,168	261	186	69
Austria.....	16	11	3	2	-
Belgium.....	20	13	5	1	1
Denmark.....	22	19	3	-	-
France.....	76	53	12	4	7
German Federal Republic.....	139	83	32	7	17
Greece.....	71	51	7	3	10
Ireland.....	39	17	12	9	1
Italy.....	69	49	12	7	1
Netherlands.....	59	40	13	2	4
Norway.....	21	18	2	1	-
Spain.....	40	22	10	6	2
Sweden.....	56	46	4	5	1
Switzerland.....	36	26	7	3	-
United Kingdom.....	964	688	127	130	19
Other.....	50	29	12	5	4
Eastern Europe.....	658	480	89	47	42
Poland.....	186	119	35	11	21
USSR.....	255	204	29	17	5
Yugoslavia.....	35	21	7	2	5
Other.....	182	136	18	17	11
Asia.....	6,151	4,723	764	566	98
Near and Middle East....	1,229	1,015	94	93	27
Iran.....	695	592	38	53	12
Iraq.....	47	33	8	5	1
Israel.....	109	71	15	13	10
Lebanon.....	114	100	6	8	-
Other Near and Middle East.....	264	219	27	14	4
Far East.....	4,922	3,708	670	473	71
Hong Kong.....	161	109	25	24	3
Mainland China.....	601	464	73	62	2
India.....	1,573	1,168	287	98	20
Pakistan.....	174	149	15	7	3
Japan.....	83	62	11	9	1
Korea.....	276	218	37	14	7

See footnotes at end of table.

TABLE C-6. Immigrant scientists and engineers by country or region of birth and by major group: 1983--con.

Country or region of birth	Total, all groups	Engineers	Natural scientists	Mathematics and related, and computer specialists	Social scientists
Philippines.....	644	526	67	42	9
Taiwan.....	1,011	713	105	179	14
Other Far East.....	399	299	50	38	12
Africa.....	537	372	101	46	18
Egypt.....	164	117	38	4	5
Other Africa.....	373	255	63	42	13
North and Central America.....	995	692	157	79	67
Canada.....	282	180	55	37	10
Mexico.....	189	157	19	6	7
Other North and Central America.....	524	355	83	36	50
South America.....	457	321	61	41	34
Argentina.....	51	35	8	6	2
Bolivia.....	19	13	-	4	2
Brazil.....	27	17	6	2	2
Chile.....	28	18	4	3	3
Colombia.....	83	54	17	7	5
Ecuador.....	19	13	1	1	4
Peru.....	65	51	2	3	9
Venezuela.....	69	50	10	7	2
Other South America....	96	70	13	8	5
All other areas.....	83	46	18	10	9
Australia.....	50	28	9	6	7
New Zealand.....	28	16	7	3	2
Other areas.....	6	3	2	1	-

- Data not available.

SOURCE: Immigration and Naturalization Service, U. S. Dept. of Justice, and National Science Foundation

TABLE C-7. Immigrant scientists and engineers by country or region of birth and by major group: 1984

Country or region of birth	Total, all groups	Engineers	Natural scientists	Mathematics and related, and computer specialists	Social scientists
All countries.....	9,502	7,281	1,173	732	316
Europe.....	2,297	1,667	326	195	109
Western Europe.....	1,557	1,121	225	160	51
Austria.....	18	14	3	-	1
Belgium.....	26	16	6	3	1
Denmark.....	26	23	1	1	1
France.....	81	57	12	7	5
German Federal Republic.....	139	87	30	10	12
Greece.....	85	61	11	5	8
Ireland.....	44	28	4	10	2
Italy.....	47	33	10	4	-
Netherlands.....	48	33	9	5	1
Norway.....	17	17	-	-	-
Spain.....	33	20	8	3	2
Sweden.....	63	53	7	2	1
Switzerland.....	36	27	7	1	1
United Kingdom.....	859	628	114	105	12
Other.....	35	24	3	4	4
Eastern Europe.....	740	546	101	35	58
Poland.....	269	187	37	12	33
USSR.....	189	148	19	11	11
Yugoslavia.....	55	38	12	1	4
Other.....	227	173	33	11	10
Asia.....	5,338	4,296	570	388	84
Near and Middle East.....	1,289	1,074	107	78	30
Iran.....	757	638	62	44	13
Iraq.....	62	53	7	2	-
Israel.....	122	82	16	15	9
Lebanon.....	115	100	5	5	5
Other Near and Middle East.....	233	201	17	12	3
Far East.....	4,049	3,222	463	310	54
Hong Kong.....	147	116	11	16	4
Mainland China.....	433	369	38	23	3
India.....	1,081	879	156	42	4
Pakistan.....	187	151	23	9	4
Japan.....	72	45	17	7	3
Korea.....	197	163	2	18	7

See footnotes at end of table.

TABLE C-7. Immigrant scientists and engineers by country or region of birth and by major group: 1984--con.

Country or region of birth	Total, all groups	Engineers	Natural scientists	Mathematics and related, and computer specialists	Social scientists
Philippines.....	743	618	69	44	12
Taiwan.....	806	583	94	120	9
Other Far East.....	383	298	46	31	8
Africa.....	450	328	72	40	10
Egypt.....	132	98	28	4	2
Other Africa.....	318	230	44	36	8
North and Central America.	867	616	124	70	57
Canada.....	248	164	42	28	14
Mexico.....	140	112	11	7	10
Other North and Central America.....	479	340	71	35	33
South America.....	466	317	63	34	52
Argentina.....	52	34	13	2	3
Bolivia.....	22	17	2	-	3
Brazil.....	35	20	6	5	4
Chile.....	29	14	8	2	5
Colombia.....	89	59	11	5	14
Ecuador.....	17	14	1	1	1
Peru.....	68	47	5	9	7
Venezuela.....	83	62	7	6	8
Other South America....	71	50	10	4	7
All other areas.....	84	57	18	5	4
Australia.....	48	35	7	3	3
New Zealand.....	23	11	10	1	1
Other areas.....	13	11	1	1	-

- Data not available.

SOURCE: Immigration and Naturalization Service, U. S. Dept. of Justice, and National Science Foundation

TABLE C-8. Migration patterns of scientists and engineers who became immigrants in 1984

Country or region of last permanent residence	Total immigrants	Birthplace and last residence the same	Birthplace and last residence differ, by region of birth								
			Total	Western Europe	Eastern Europe	Near and Middle East	Far East	Africa	North and Central America	South America	All other areas
All countries.....	9,502	7,565	1,937	242	272	350	740	154	101	57	19
Percent distribution.....	100.0	79.6	20.4	2.5	2.9	4.4	7.1	1.6	1.1	.6	.2
Europe.....	2,514	1,783	731	79	190	195	144	71	29	17	6
Western Europe.....	2,017	1,315	702	76	172	194	139	71	29	16	5
Austria.....	51	8	43	-	39	3	1	-	-	-	-
Belgium.....	42	23	19	7	3	3	4	2	-	-	-
Denmark.....	24	23	1	-	-	-	-	-	-	-	-
France.....	127	68	59	11	6	22	10	6	2	2	-
German Federal Republic.....	267	126	141	20	48	41	28	2	-	1	1
Greece.....	87	73	14	-	3	10	-	1	-	-	-
Ireland.....	34	30	4	3	-	-	1	-	-	-	-
Italy.....	128	32	96	2	58	31	3	1	-	1	-
Netherlands.....	49	35	14	3	-	2	6	2	-	1	-
Norway.....	19	15	4	1	1	1	1	-	-	-	-
Spain.....	45	28	17	-	3	4	-	-	7	3	-
Sweden.....	68	60	8	2	3	3	-	-	-	-	-
Switzerland.....	48	32	16	8	2	2	2	1	-	1	-
United Kingdom.....	1,001	737	264	18	6	70	83	56	20	7	4
Other.....	27	25	2	-	-	2	-	-	-	-	-
Eastern Europe.....	497	468	29	3	18	1	5	-	-	1	1
Poland.....	205	199	6	1	5	-	-	-	-	-	-
USSR.....	114	105	9	1	5	1	2	-	-	-	-
Yugoslavia.....	44	39	7	1	4	-	1	-	-	-	-
Other.....	134	127	7	-	4	-	2	-	-	1	-
Asia.....	4,871	4,248	623	36	40	120	376	40	1	7	1
Near and Middle East....	1,350	1,098	252	24	36	106	55	23	1	6	-
Iran.....	578	571	7	-	-	3	3	1	-	-	-
Iraq.....	26	23	3	-	1	1	1	-	-	-	-
Israel.....	162	106	56	2	33	10	-	7	-	4	-
Lebanon.....	93	82	11	-	-	7	-	3	1	-	-
Other Near and Middle East.....	491	316	175	22	2	85	51	12	-	2	-
Far East.....	3,521	3,150	371	12	4	14	321	17	-	1	2
Hong Kong.....	176	110	66	4	-	-	62	-	-	-	-
Mainland China.....	254	228	26	-	-	-	26	-	-	-	-
India.....	963	910	55	1	-	2	35	16	-	1	-
Pakistan.....	159	121	38	2	-	9	27	-	-	-	-
Japan.....	71	65	6	-	-	1	5	-	-	-	-

footnotes at end of table.

TABLE C-8. Migration patterns of scientists and engineers who became immigrants in 1984--con.

Country or region of last permanent residence	Total immigrants	Birthplace and last residence the same	Birthplace and last residence differ, by region of birth								
			Total	Western Europe	Eastern Europe	Near and Middle East	Far East	Africa	North and Central America	South America	All other areas
Korea.....	184	184	-	-	-	-	-	-	-	-	-
Philippines.....	715	709	6	-	-	1	5	-	-	-	-
Taiwan.....	874	757	117	-	1	-	116	-	-	-	-
Other Far East.....	125	68	57	5	3	1	45	-	-	-	2
Africa.....	372	296	76	16	8	2	32	12	4	1	1
Egypt.....	113	108	5	1	1	1	-	1	-	-	1
Other Africa.....	259	188	71	15	7	1	32	11	4	1	-
North and Central America.....	1,152	766	386	85	24	27	158	23	50	15	3
Canada.....	561	239	322	75	24	35	152	23	10	9	3
Mexico.....	147	138	9	3	-	-	2	-	3	1	-
Other North and Central America.....	444	389	55	7	-	2	4	-	37	5	-
South America.....	481	409	72	12	3	4	16	4	16	16	1
Argentina.....	43	42	2	1	-	-	-	-	-	1	-
Bolivia.....	20	17	3	-	-	-	1	-	2	-	-
Colombia.....	84	81	3	-	-	-	-	-	1	2	-
Brazil.....	54	33	21	2	1	1	12	1	2	2	-
Chile.....	24	24	-	-	-	-	-	-	-	-	-
Ecuador.....	18	17	1	-	-	-	1	-	-	1	-
Peru.....	59	58	1	-	-	-	1	-	-	-	-
Venezuela.....	115	80	35	8	2	2	-	3	9	10	1
Other South America.....	64	53	11	1	-	1	4	-	4	1	-
All other areas.....	111	63	48	14	6	2	14	4	1	1	6
Australia.....	81	41	40	12	5	2	10	4	1	1	5
New Zealand.....	20	16	4	2	-	-	1	-	-	-	1
Other areas.....	11	6	5	-	2	-	3	-	-	-	-

- Data not available.

SOURCE: Immigration and Naturalization Service, U. S. Dept. of Justice, and National Science Foundation

TABLE C-9. Immigrant scientists and engineers by state of intended residence and major group: 1984

State of intended residence	Total, all groups	Engineers	Natural scientists	Mathematics and related and computer specialists	Social scientists
All States.....	9,502	7,281	1,173	732	316
New England.....	561	433	67	37	24
Connecticut.....	156	113	24	14	5
Maine.....	6	3	1	1	1
Massachusetts.....	327	256	38	20	13
New Hampshire.....	34	28	2	1	3
Rhode Island.....	25	22	1	1	1
Vermont.....	13	11	1	-	1
Middle Atlantic.....	1,819	1,326	251	165	77
New Jersey.....	562	398	65	78	21
New York.....	999	748	144	65	42
Pennsylvania.....	258	180	42	22	14
East North Central.....	1,162	869	184	74	35
Illinois.....	533	414	62	35	22
Indiana.....	75	52	19	3	1
Michigan.....	242	187	34	17	4
Ohio.....	235	167	45	17	6
Wisconsin.....	77	49	24	2	2
West North Central.....	262	184	47	24	7
Iowa.....	26	14	6	5	1
Kansas.....	31	23	4	4	-
Minnesota.....	91	65	11	10	5
Missouri.....	74	57	13	4	-
Nebraska.....	21	14	6	-	1
North Dakota.....	9	3	5	1	-
South Dakota.....	10	8	2	-	-
South Atlantic.....	1,129	850	144	82	53
Delaware.....	23	13	7	2	1
District of Columbia....	30	17	5	3	5

See footnotes at end of table.

TABLE C-9. Immigrant scientists and engineers by state of intended residence and major group: 1984--con.

State of intended residence	Total, all groups	Engineers	Natural scientists	Mathematics and related and computer specialists	Social scientists
Florida.....	420	332	34	32	22
Georgia.....	104	80	13	8	3
Maryland.....	253	190	37	14	12
North Carolina.....	78	53	20	5	-
South Carolina.....	43	34	6	3	-
Virginia.....	160	121	18	13	8
West Virginia.....	18	10	4	2	2
East South Central.....	117	92	18	4	3
Alabama.....	37	32	3	1	1
Kentucky.....	25	20	5	-	-
Mississippi.....	11	8	2	-	1
Tennessee.....	44	32	8	3	1
West South Central.....	896	689	116	76	15
Arkansas.....	10	5	2	2	1
Louisiana.....	126	93	16	10	7
Oklahoma.....	92	71	7	14	-
Texas.....	668	520	91	50	7
Mountain.....	391	282	72	25	12
Arizona.....	168	129	21	15	3
Colorado.....	116	83	28	2	3
Idaho.....	5	4	1	-	-
Montana.....	5	3	1	-	1
Nevada.....	25	21	2	2	-
New Mexico.....	23	11	8	1	3
Utah.....	44	27	10	5	2
Wyoming.....	5	4	1	-	-
Pacific.....	3,093	2,497	267	242	87
Alaska.....	16	12	2	1	1
California.....	2,849	2,299	242	227	81
Hawaii.....	54	41	6	7	-
Oregon.....	69	62	3	2	2

See footnotes at end of table.

TABLE C-9. Immigrant scientists and engineers by state of intended residence and major group: 1984--con.

State of intended residence	Total, all groups	Engineers	Natural scientists	Mathematics and related and computer specialists	Social scientists
Washington.....	105	83	14	5	3
Outlying areas.....	72	59	7	3	3

- Data not available.

SOURCE: Immigration and Naturalization Service, U. S. Dept. of Justice, and National Science Foundation

TABLE C-10. Immigrant scientists and engineers by sex, age group, and region of last permanent residence: 1984

Broad occupation, sex, and age group	Region of last permanent residence								
	Total	Western Europe	Eastern Europe	Near and Middle East	Far East	Africa	North and Central America	South America	All other areas
All occupational groups...	9,502	2,017	497	1,350	3,521	372	1,152	481	111
Male, total.....	8,418	1,815	352	1,255	3,105	340	1,041	407	102
Under 30.....	2,931	582	74	557	1,101	112	331	144	29
30-44.....	4,410	1,018	205	571	1,594	199	562	198	63
45 and over.....	1,077	215	73	127	410	29	148	65	10
Female, total.....	1,084	202	145	95	416	32	111	74	9
Under 30.....	480	87	46	56	187	16	50	33	5
30-44.....	519	105	77	37	192	13	53	38	4
45 and over.....	85	10	22	2	37	3	8	3	-
Scientists, total.....	2,221	542	138	209	719	101	333	146	33
Male, total.....	1,601	420	63	165	493	83	258	94	25
Under 30.....	440	132	15	49	135	22	64	20	3
30-44.....	1,010	261	38	99	311	57	161	62	21
45 and over.....	151	27	10	17	47	4	33	12	1
Female, total.....	620	122	75	44	226	18	75	52	8
Under 30.....	245	52	23	16	88	9	30	23	4
30-44.....	331	64	41	27	120	8	40	27	4
45 and over.....	44	6	11	1	18	1	5	2	-
Engineers, total.....	7,281	1,475	359	1,141	2,802	271	819	335	78
Male, total.....	6,817	1,395	289	1,090	2,612	257	783	313	77
Under 30.....	2,491	450	59	508	966	90	267	124	26
30-44.....	3,400	757	167	472	1,283	142	401	136	42
45 and over.....	926	188	63	110	363	25	115	53	9
Female, total.....	464	80	70	51	190	14	36	22	1
Under 30.....	235	35	23	40	99	7	20	10	1
30-44.....	188	41	36	10	72	5	13	11	-
45 and over.....	41	4	11	1	19	2	3	1	-

- No amount available

SOURCE: Immigration and Naturalization Service, U. S. Dept. of Justice,
and National Science Foundation

other science resources publications

	NSF No.	Price		NSF No.	Price		NSF No.	Price
Science Resources Studies Highlights			Funds, Fiscal Year			S/E Personnel		
R&D Funds			1983	85-308	-----	Federal Scientific and Technical Personnel Numbers and Characteristics, 1973 and 1983	85-312	-----
"15% Increase in Federal R&D Funds Proposed in 1986 Budget, Mostly for Defense"	85-322	-----	Federal Funds for Research and Development, Fiscal Years 1983, 1984, and 1985, Volume XXXIII	84-336	-----	Scientific and Technical Work Force in Trade and Regulated Industries Shows Major Shift in Occupational Composition: 1979-82	84-323	-----
"Federal Emphasis on Defense is Major Factor in 1983 Increase in Industrial R&D Performance"	85-328	-----	Research and Development in Industry: 1982 R&D Funds, 1982; Scientists and Engineers, January 1983	84-325	-----	Projected Response of the Science, Engineering, and Technical Labor Market to Defense and Nondefense Needs: 1982-87	84-304	-----
"Federal Academic R&D Funds Continue Strong Growth Through 1985"	85-314	-----	S/E Personnel			Women and Minorities in Science and Engineering	84-300	-----
"Academic R&D Funding Increased 7% in FY 1983, Higher Gains Expected Through 1985"	85-306	-----	Academic Science/Engineering: Scientists and Engineers, January 1984	85-316	-----			
"7% Real Growth Expected in National R&D Expenditures in 1985: Defense and Economy Major Factors"	85-304	-----	U S. Scientists and Engineers: 1982, Volume 2	85-307	-----	Composite		
S/E Personnel			Academic Science/Engineering: Graduate Enrollment and Support, Fall 1983	85-300	-----	International Science and Technology Data Update	-----	-----
"Universities Report Research Equipment Shortages Are Most Severe in the Physical Sciences and Engineering"	85-320	-----	Reports			Comparison of Scientific and Technical Personnel Trends in the United States, France, West Germany, and the United Kingdom Since 1970	84-335	-----
"All Fields Share in 3% Growth in Academic S/E Employment"	85-317	-----	R&D Funds			Resources Supporting Scientific and Engineering Activities at Historically Black Colleges and Universities	84-332	-----
"Graduate S/E Enrollment Rose 4% in 1983, With Major Gains in Computer Science and Engineering"	85-313	-----	Federal Support to Universities, Colleges, and Selected Nonprofit Institutions, Fiscal Year 1983	85-321	-----	Science and Technology Data Book	84-331	-----
"Ph. D. Scientists and Engineers Shift to Industrial Employment and Related Activities"	85-301	-----	Federal R&D Funding by Budget Function: Fiscal Years 1984-86	85-319	-----	Academic Science/Engineering: 1972-83. R&D Funds, Federal Support, Scientists and Engineers, Graduate Enrollment and Support	84-322	-----
Detailed Statistical Tables			A Comparative Analysis of Information on National Industrial R&D Expenditures	85-311	-----	National Patterns of Science and Technology Resources: 1984	84-311	-----
R&D Funds			Federal Funds for Research and Development, Fiscal Years 1982, 1983, and 1984, Volume XXXII	84-326	-----	A Guide to NSF Science/Engineering Resources Data	84-301	-----
Academic Science/Engineering: R&D			Trends in Small Companies' R&D Expenditures	84-324	-----			